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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,096	07/08/2003	Dmitry Oleynikov	UNMC/0006	9525
7590 10/04/2004			EXAMINER	
Moser, Patterson & Sheridan, LLP			IP, SHIK LUEN PAUL	
Suite 1500			ART UNIT	
3040 Post Oak Blvd.			PAPER NUMBER	
Houston, TX 77056-6582			2837	

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/616,096

Applicant(s)

OLEYNIKOV ET AL.

Examiner

Paul Ip

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>Jan 8, May 17, 04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on Jan. 8 and May 17, 2004 in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-24 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. Claims 1-24 categories recite elements without the recitation of any relationship between the elements in order provide the functional relationship between the elements. For example, claim 1 recites a body twice, an actuator, a power supply and at least one device selected from a manipulator or a sensor without the recitation of any structural or functional relationship causing the claims confusing, vague, and indefinite. Claims 2, 4, 10, 16, 19, 21, and 22 recite a plurality of elements without the recitation of any structural or functional relationship causing the claims confusing, vague, and indefinite. See MPEP § 2172.01.

Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. Claim 20 recites a method for performing minimally invasive surgery inside a body of an animal without the recitation of any method steps for performing minimally invasive surgery inside a body of an animal. The claim is a "using" claim for using the device of claim 1 for performing minimally invasive surgery inside a body of an animal. Furthermore, it is not clear whether claim 20 is an independent or dependent claim. See MPEP § 2172.01.

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Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 1-6, 10-17, and 20-24 are rejected under 35 U.S.C. 102(a) as being anticipated by Kim et al (2002/0156347 or 6,648,814).

The patent and publication to Kim et al disclose micro robot for colonoscopy comprising a power supply 100, a controlling unit 200, light emitting unit 310, camera 320, sensors, 330, motors 340, and linear actuators 350. Figures 2, 3, 4, 6A, 6B, 7, 8A, and 8B show the robot in cylinder or snake shape. Kim et al disclose that the linear actuators 350-2 are embodied by shape memory alloy and polymer varying its length.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 7-9, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (2002/0156347 and 6,648,814) in view of Sasaki et al (5,304,899) or Kim et al (2003/0092964 and 6,719,684).

Claims 7-9, 18, and 19 further require the micro robot comprising a transmitter and a receiver. However, the patents to Sasaki et al and Kim et al (2003/0092964 and 6,719,684) teach and suggest micro robots using transceiver for transmitting communication with an external control system. Since Kim et al (2002/0156347 and 6,648,814) disclose a wire 301 for communication with an external control, and the use of wireless communication for micro robot control is notorious old in the art, it would have been obvious to one of ordinary skill in the art to provide Kim et al (2002/0156347 and 6,648,814) with the transceiver as taught or suggested by Sasaki et al or Kim et al (2003/0092964 and 6,719,684).

Citation of Pertinent References

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents and publications disclose cylindrical or snake type robots pertinent to the invention: Ghorbel et al (2003/0089267 and 2004/0173116), Suyama (5,736,821), Ruch et al (4,852,391), Minor et al (6,309,403), Schempf et al (2002/0190682 and 5,363,935), Byrne et al (6,687,571), Belson (6,468,203), Belson et al (6,610,007), Ng et al (6,162,171), Wiesman et al (5,172,639), Borenstein et al (6,512,345), Borenstein (2004/0140786 and 6,774,597), Smart (5,878,783 or 6,031,371 or 6,107,795), Grant et al (6,450,104), Schmidt (2003/0230372), and Pelrine et al (5,388,528 and 5,284,096).

Customer Services Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Ip whose telephone number is (571)-272-1941. The examiner can normally be reached on Monday to Friday from 6:30 a.m. to 3:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on (571)-272-1207. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul Ip
Primary Examiner
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